Claims

[c1]   1. A method of controlling a manufacturing system, said method comprising:

providing at least one processing tool and at least one set of auxiliary equipment;

supplying a plurality of workpieces to be processed on said processing tool; and

determining, from characteristics associated with said processing tool and said plurality of workpieces, an order of arrival of said auxiliary equipment to arrive at said processing tool.

[c2]   2. The method of claim 1, wherein in said providing, said processing tool comprises a photolithographic system.

[c3]   3. The method of claim 2, wherein in said providing, said auxiliary equipment comprises a reticle.

[c4]   4. The method of claim 1, further comprising modeling future events related to said processing tool based on work-in-process profiles generated from an iteration of said method.

[c5]   5. The method of claim 1, wherein in said supplying, said plurality of workpieces comprise semiconductor wafers.

[c6]   6. The method of claim 1, wherein said characteristics associated with said plurality of workpieces comprise work lot priorities, processing times, auxiliary equipment handling system bandwidth, lot priorities of forecasted lots, and pod availability.

[c7]   7. The method of claim 1, wherein said determining comprises ranking said auxiliary equipment in terms of expected arrival times to said processing tool.

[c8]   8. The method of claim 1, further comprising modeling future events related to said processing tool based on work-in-process projections.

[c9]   9. A method of controlling a manufacturing system, said method comprising:
providing a plurality of workpieces to be processed on a processing tool, said plurality of workpieces located at processing stations prior to said processing tool;
determining auxiliary equipment allocation needs for said processing tool based on characteristics associated with said plurality of workpieces prior to said workpieces arriving at said processing tool; and
sending auxiliary equipment to said processing tool based on said allocation needs prior to said workpieces arriving at said processing tool.

[c10]   10. The method of claim 9, wherein in said providing, said processing tool comprises a photolithographic system.

[c11]   11. The method of claim 10, wherein in said determining, said auxiliary equipment comprises a reticle.

[c12]   12. The method of claim 9, wherein in said providing, said plurality of workpieces comprise semiconductor wafers.

[c13]   13. The method of claim 9, wherein said characteristics associated with said plurality of workpieces comprise work lot priorities, processing times, auxiliary equipment handling system bandwidth, lot priorities of forecasted lots, and pod availability.

[c14]   14. The method of claim 9, wherein said determining comprises ranking said workpieces in terms of expected arrival times to said processing tool.

[c15]   15. The method of claim 9, further comprising modeling future events related to said processing tool based on work-in-process projections.

[c16]   16. A system for controlling a manufacturing process comprising:

a processing tool configured for processing a plurality of workpieces;

a processing station comprising said plurality of workpieces, wherein a location

of said processing station precedes a location of said processing tool;

an analyzer configured for determining, from characteristics associated with

said plurality of workpieces, an order of arrival of a first of said workpieces to

arrive at said processing tool; and

a controller configured for providing auxiliary equipment corresponding to the

first workpieces to said processing tool prior to the arrival of said first

workpieces to said processing tool.

[c17]   17. The system of claim 16, wherein said processing tool comprises a

photolithographic system.

[c18]   18. The system of claim 17, wherein said auxiliary equipment comprises a

reticle.

[c19]   19. The system of claim 16, wherein said plurality of workpieces comprise

semiconductor wafers.

[c20]   20. The system of claim 16, wherein said characteristics associated with said

plurality of workpieces comprise work lot priorities, processing times, auxiliary

equipment handling system bandwidth, lot priorities of forecasted lots, and pod

availability.

[c21]   21. The system of claim 16, wherein said analyzer is configured for ranking

said workpieces in terms of expected arrival times to said processing tool.

[c22]   22. The system of claim 16, further comprising a modeling generator

configured for modeling future events related to said processing tool based on

work-in-process projections generated from said analyzer.

[c23]   23. A program storage device readable by computer, tangibly embodying a program of instructions executable by said computer to perform a method of controlling a manufacturing system, said method comprising:

providing at least one processing tool and auxiliary equipment;

supplying a plurality of workpieces to be processed on said processing tool; and

determining, from characteristics associated with said processing tool and said plurality of workpieces, an order of arrival of said auxiliary equipment to arrive at said processing tool.

[c24]   24. The program storage device of claim 23, wherein in said providing, said processing tool comprises a photolithographic system.

[c25]   25. The program storage device of claim 24, wherein in said providing, said auxiliary equipment comprises a reticle.

[c26]   26. The program storage device of claim 23, wherein in said supplying, said plurality of workpieces comprise semiconductor wafers

[c27]   27. The program storage device of claim 23, wherein said characteristics associated with said plurality of workpieces comprise work lot priorities, processing times, auxiliary equipment handling system bandwidth, lot priorities of forecasted lots, and pod availability.

[c28]   28. The program storage device of claim 23, wherein said determining comprises ranking said workpieces in terms of expected arrival times to said processing tool.

[c29]   29. The program storage device of claim 23, wherein said method further comprises modeling future events related to said processing tool based on work-in-process projections.

[c30]   30. A method of inspecting auxiliary equipment in a manufacturing process, said method comprising:

creating a list of potential auxiliary equipment for inspection;

designating said potential auxiliary equipment according to inspection requirements; and

prioritizing said potential auxiliary equipment according to a set of defined rules.

[c31]   31. The method of claim 30, wherein in said creating, said auxiliary equipment comprises a reticle.

[c32]   32. The method of claim 30, wherein the creation of said list comprises categorizing said reticles into groups including:

a first set comprising reticles associated with a dispatchable wafer lot;

a second set comprising reticles associated with work-in-process projections; and

a third set comprising reticles other than reticles in the first and second sets.

[c33]   33. The method of claim 30, wherein said inspection requirements comprise warning limits and inhibit limits associated with inspecting said auxiliary equipment.

[c34]   34. The method of claim 33, wherein said set of defined rules comprises specified designations including any of dispatchable wafer lot and said inhibit limits categorizations, dispatchable wafer lots and said warning limits categorizations, work-in-process projections within a specified time window and said inhibit limits categorizations, and work-in-process projections within a specified time window and said warning limits categorizations.

[c35]   35. The method of claim 30, further comprising:

re-prioritizing the prioritized potential reticles into a re-prioritized list based on a

second set of defined rules; and

removing duplicate reticles from the re-prioritized list.

[c36] 36. The method of claim 32, wherein said second set of defined rules comprises prioritization rules and projected work-in-process arrival times.

[c37] 37. The method of claim 30, further comprising:

determining candidate reticles to kit and unkit based on any of reticle requirements for dispatchable wafer lots, high volume wafer lot types, and forecasted upstream wafer lot arrivals; and

prioritizing kitting and unkitting actions based on any of wafer lot priority, forecasted upstream wafer lot priority, pod availability, and reticle handling system bandwidth.